

## REMARKS

The present amendment responds to the Office Action mailed October 31, 2005 ("Office Action") and is timely filed by January 31, 2006. Claims 1 – 3, 5 – 19 and 23 are pending and stand rejected. The present amendment amends independent claims 1, 10 and 19. Applicants respectfully request entry of the amendments and the Examiner's reconsideration of the rejections in light of the amendments and following remarks.

Claims 1, 10 and 19 are amended to add that the step of oxidizing the nitrated gate oxide layer distances the nitrated gate oxide layer away from the semiconductor substrate. Support for the amendments is found at least at page 13, lines 4 – 13. Accordingly, the amendments do not introduce new matter.

### **Rejection of the claims under 35 U.S.C. § 103(a):**

All the pending claims presently are rejected under 35 U.S.C. § 103 over the combination of JP 2000-311928 A ("Yasushi") in view of U.S. Patent No. 6,372,581 ("Bensahel"). Applicants respectfully traverse the rejection.

The Examiner has not shown that the cited references teach or suggest that the step of oxidizing the nitrated gate oxide layer distances the nitrated gate oxide layer away from the semiconductor substrate, as she must to make a proper case of obviousness. *See, e.g. C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 48 U.S.P.Q.2d 1225 (Fed. Cir. 1998) (requiring "there be some suggestion, motivation, or teaching in the prior art" that would have suggested the claimed invention to one of ordinary skill in the art to establish a proper case of *prima facie* obviousness). To the contrary, Bensahel discloses that the prior art method of using NO for nitrating gate oxide layers "does not allow the presence of nitrogen to be localized precisely at the interface between the substrate and the gate oxide layer (Si/SiO<sub>2</sub> interface." (Bensahel at col. 1.) In contrast to a method where the step of oxidizing the nitrated gate oxide layer distances the nitrated gate oxide layer away from the semiconductor substrate, as presently claimed, Bensahel's method seeks to "obtain a gate oxide layer . . . principally located close to the substrate/gate oxide layer interface." (*Id.*) Nor has the Examiner provided evidence from Yasushi, as she must to shoulder her burden of proving *prima facie* obviousness by a preponderance of evidence, that would have

taught or suggested a step of oxidizing the nitrided gate oxide layer that distances the nitrided gate oxide layer away from the semiconductor substrate.

The combined references particularly do not teach or suggest imparting beneficial properties to the nitrided gate oxide layer by moving or distancing the nitrided region away from the substrate/oxide interface, as taught in the present specification. (*E.g.*, specification at page 13, line 4, *et seq.*) For instance, the cited references do not teach or suggest that this step improves carrier mobility and consequently improves the speed of the device. (*Cf.* Specification at page 13, lines 6 – 7.) Nor do the cited references teach or suggest that this step improves threshold voltage or the extent of boron penetration into the gate oxide layer. (*Cf.* Specification at page 13, lines 8 – 13.)

Because the combined references do not teach or suggest the presently claimed invention of claims 1, 10 and 19, particularly the step of oxidizing the nitrided gate oxide layer distances the nitrided gate oxide layer away from the semiconductor substrate, the rejection is improper and should be withdrawn with respect to these claims. Because the dependent claims further limit the independent claim, the rejection of the dependent claims likewise is improper and should be withdrawn, as well.

Any cancellation of subject matter is made without prejudice to applicants' right to pursue such subject matter in a subsequently continuing application. Applicants' silence with respect to any comment in the Office Action not specifically addressed above should not be construed as applicants' agreement with the Examiner's reasoning or interpretation of the claimed subject matter, the teachings of the cited art, or governing case law. In particular, should the Examiner maintain the rejection, applicants request that the Examiner clarify the basis for relying on inherent properties in the context of a rejection for obviousness (paragraph bridging pages 5 and 6 of the Office Action) and the basis for relying on *Woodruff* for the proposition that applicants must "establish criticality" of dependent claim limitations to establish non-obviousness (*e.g.*, page 6 of the Office Action).

**CONCLUSION**

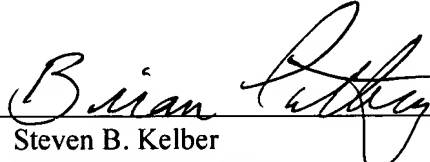
In view of the above amendments and remarks, applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

MERCHANT & GOULD P.C.

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